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(71) Applicant(s)
Rare Limited
(Incorporated in the United Kingdom)
Manor Park, TWYCROSS, Nr Atherstone, CV9 3QN, United Kingdom

(72) Inventor(s)
C T J Stamper

(74) Agent and/or Address for Service
Lewis & Taylor
144 New Walk, LEICESTER, LE1 7JA, United Kingdom

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(54) Abstract Title
**Character oriented game memory**

(57) A memory pack for use in conjunction with a computer game comprises a memory facility for storing information concerning the nature of an object to be used in a computer game. At least part of the memory facility is capable of being read and written to so that information stored therein is variable. Communication means is provided for communicating with a processor adapted to implement a computer game in use. Updates and other changes to the information concerning the object are be stored in the memory facility of the memory pack.

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Title: **Character Oriented Game Memory**

The present invention relates to a character oriented game memory, in particular but not exclusively, to a character oriented game memory for use with a recreational computer console.

Computer games are popularly played on systems which are functionally devoted to that use. Such a system includes a microprocessing device, known as a console, connected to a video monitor or television set. The console has a socket for receiving a cartridge containing program information for a particular game to be played. One or more controllers, which may be hand-held, are connected to the console, and the or each controller has a joystick, buttons or other user interface thereon. Signals from the controller or controllers are transmitted to the console and thus enable the player of a game to interact with the console.

Generally, a cartridge comprises Read Only Memory which contains a game program. The console acts under the control of the game program to process signals received from the or each controller and to provide video and audio signals to be sent to the monitor or television set.

Although many games are self contained, in that the Read Only Memory programmed by the manufacturer is sufficient to provide satisfactory performance of the game, it is often desirable to provide a facility for data to be saved during performance of the game. For instance, in certain types of game it is desirable to retain the current game position so that the game can be resumed at a later time. It can also be useful to save game settings, for instance in the case of a sports simulation game, where player information could be customised by the user or could change with user experience.

A facility for storing such data is not always provided in the console, and so previously a non-volatile memory pack has been used for that purpose. Such a memory pack has conveniently been arranged to be inserted in a corresponding receptacle on the or each

controller.

The memory pack described above is intended to be used with any game program supported by the system. However, the data stored on such a memory pack is specific to a particular game. Without plugging the memory pack into the system, it is impossible to ascertain as to the game with which the memory pack has been used previously. That is inconvenient and can cause confusion.

It is an object of the present invention to ameliorate to the above problems.

According to a first aspect of the invention, there is provided a memory pack for use in conjunction with a computer game, the pack comprising a memory facility for storing information concerning the nature of an object to be used in a computer game, at least part of which memory facility being capable of being read and written to so that information stored therein is variable, and communication means for communicating with a processor adapted to implement a computer game in use, characterised in that updates and other changes to the information concerning that object may be stored in the memory facility of the memory pack.

An object as mentioned above could consist of a playing character or "sprite", or of another object relevant to the playing of the game, such as a tool, weapon or the like.

In one embodiment of the invention, the memory facility is capable of storing initial information concerning the nature of an object to be used in a computer game. Then, some or all of the information stored can be altered through game progress or player intervention.

The memory facility may include information suitable to activate initial information concerning an object, the initial information being embedded in a program of a game console with which the memory pack is to be used.

The invention is advantageous in that it allows an object to be imported into a game, and for the characteristics of the object to be changed with use of the object in the game. In that way, for example, the strength, experience or another characteristic of a player's favourite sprite can be improved by playing a game with that sprite, and then that sprite, with the improved characteristics, can be introduced into another game.

Moreover, the player's favourite sprite may be transported into the same game played on a different machine. In that way, the memory pack allows game players to meet socially and/or competitively and play games, each player using his favourite character.

Furthermore, objects useful to the performance of a game, such as superior weapons, could be purchased separately from the game software, and so enhance the player's chance of success in the game.

Particularly in adventure games, it is common for there to be a requirement that certain objects be collected during game progress. For instance, a key might need to be collected in order to open a door into the next stage of the game. Such objects are often hidden or positioned so as to be inaccessible to all but the most dextrous player. Hence, the present invention is advantageous in that the object required to allow further progress can be embodied in a memory pack according to the invention. In that way, the weaker player need not be frustrated in playing the game.

Sports games may also be enhanced by the present invention. For instance, additional teams may be offered embodied on memory packs in accordance with the invention. Further vehicles may be offered embodied on memory packs in accordance with the invention.

Preferably, the memory pack comprises a casing, the casing including an indication of the object embodied by the memory pack. At least part of the casing may be in the shape of the object embodied by the memory pack.

In a preferred embodiment of the invention, the memory pack includes a support. The support may be engageable with an adaptor of a computer game console. Preferably, the adaptor includes communication means operative to interact with the communication means of the memory pack. The communication means of the adaptor and the communication means of the memory pack may be operative to define an infrared link for the transfer of data between the memory pack and a computer game console in use. Away from the game console, the support may be sufficient to act as a base on which the memory pack may stand. The memory pack may in that way be used as a toy while it is not in use in conjunction with a computer console.

The adaptor may be connectable to a computer game console, or in an alternative embodiment may be an integral part of a computer console.

Preferably, the adaptor comprises a formation into which the support is insertable. The formation may be a nest in which the support can sit.

In a preferred embodiment of the invention, the adaptor is connectable into a joystick of a computer game console. The adaptor may include a joystick port for receiving a joystick connector.

In that way, a joystick can be connected to a console via an adaptor with a memory pack engaged therewith.

Alternatively, the memory pack may comprise a card for insertion in a slot of a card reading device. Preferably, the card includes an integrated circuit. Such a card can be stored in a wallet, increasing portability. The card may have on at least one surface a pictorial representation of a character or other object which is implemented by the card, either by the storage of initial information thereon or by the storage of information suitable to trigger initial information embedded in a game program.

Further aspects and advantages of the invention will be apparent from the following description, by way of example, of a specific embodiment of apparatus in accordance with the invention with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a character based memory pack of a specific embodiment of the invention;

Figure 2 is a perspective view of a nest illustrated with the memory pack of figure 1 being installed therein;

Figure 3a is a perspective view of an alternative embodiment of a nest for use with the memory pack of figure 1;

Figure 3b is a perspective view of the nest illustrated in figure 3a with a memory pack similar to that of figure 1 being installed therein;

Figure 4 is a perspective view of another alternative embodiment of a nest for use with the memory pack of figure 1;

Figure 5 is a perspective view of a computer games console of known type and arranged in use with the memory pack of figure 1 and the next of figure 2;

Figures 6a, 6b and 6c are perspective views of alternative embodiments of a memory pack in accordance with the invention; and

Figure 7 is a block diagram showing the component functional parts of a memory pack as illustrated in one of figures 1, 6a and 6b and 6c, in conjunction with a nest as illustrated in one of figures 2 to 4.

As shown in figure 1, a memory pack 10 in accordance with the invention comprises a figure

12 in the shape of a three dimensional representation of a character from a computer game, mounted on a disc shaped base 14.

Figure 2 illustrates a nest 20 which comprises a body 22, which is generally ellipsoidal, but may be any suitable shape to be laid on a flat surface. On one of the flattened sides of the body, being the upper side in use, there is a recess 26 within which the base 14 of the memory pack 10 can be retained. In a preferred embodiment, the base 14 may be close fitting in the recess 26. Otherwise, a detent, or other latching means could be provided to retain the base 14 within the recess 26.

A flexible cable 28 extends from the body 22, and is terminated by a plug 29. The cable 28 may be of any type appropriate for the transmission of digital data, and the plug 29 is preferably of a type conveniently used for joysticks and controllers.

Figure 3a illustrates a nest 30 of similar construction to the nest 20 illustrated in figure 2. The nest comprises a body 32 and a recess 36 corresponding to those discussed above. Moreover, the body 32 is generally shaped to fit against a console, preferably of known type.

A plug 38 projects directly from one side of the body 32 of the nest 30. In that way, the next can be fitted directly into a socket on a console, in a compact manner.

As illustrated in figure 3b, a base of a memory pack can be inverted in the recess 36.

Figure 4 illustrates a multiple version of the nest 30 described with regard to figure 3. The nest 40 includes a body 42 shaped to fit against the side of a console. A row of recesses 44 are formed in one side of the body, that side being the upper side in use. Each recess 44 is capable of receiving and retaining the base of a memory pack as illustrated in figure 1.

The nest 40 comprises, along one side, a row of four plugs 46, which are intended to register with four joystick/controller sockets of a computer game console. In that way, the nest may

be fitted to a four player console over all player sockets.

The nest of figure 4 further includes a row of four joystick/controller sockets 46 into each of which a plug may be inserted in use.

Figure 5 illustrates the use of the memory pack 10 of figure 1 in relation to a console 50. The console 50 illustrated in the figure comprises a body 52, with a row of four sockets 54 each for receiving a joy/stick controller plug. The console 50 further has a slot for the insertion of a game cartridge 58, and a flexible connector (not shown) for connection to a television or video monitor (not shown).

The plug 29 of the nest 20 as illustrated in figure 2 is inserted into one of the sockets 54. The base 14 of the memory pack 10 is inserted in the recess 26 of the nest 20.

A controller may be installed in the arrangement above, by insertion of the plug of the controller into one of the other sockets 54. Otherwise, the nest 20 can be provided with a socket into which a joystick/controller plug may be inserted; in that way, the use of a nest does not limit the availability of sockets for use by players' controllers.

Figure 6a illustrates another memory pack 60, with a car shaped body 62 instead of the animate shaped body 22 of the embodiment illustrated in figure 2.

Figure 6b illustrates an alternative memory pack 64 having an animate shaped body 66, representing a character which could be imported into a game.

Figure 6c illustrates a memory pack 68 having a body 69 in the shape of a castle, demonstrating the wide variety of objects which could be embodied on a memory pack of the described type.

Figure 7 illustrates schematically the general layout of hardware in each of the memory packs

10, 60 illustrated in figures 1 and 6, and that of the single recess next 20, 30 illustrated in figures 2 and 3. It also demonstrates the way in which the memory pack and the nest interface.

As shown in figure 7, each of the illustrated memory packs includes electronics. In particular, the electronics includes a microcomputer 72, read only memory (ROM) 74, random access memory (RAM) 76, and non volatile random access memory (NVRAM) 78. The above components are interconnected by a bus 80.

Moreover, each memory pack includes an infra red transmitter 82 and an infra red receiver 84 for respectively sending and receiving data.

The memory pack is powered by means of a solar power cell 86, via a rechargeable battery or low leakage capacitor 88.

The nest includes electronics to interface with the memory pack, and to allow the console to which the nest is connected in use to communicate with the memory pack. The electronics of the nest comprises an infra red receiver 90 and an infra red transmitter 92, and a light source 94.

The electronics of the memory pack are ideally situated in the base of the memory pack. That is advantageous in that the bases of different memory packs may be of common design.

The infra red transmitter and receiver 82, 84 and the solar cell 86 of the memory pack are most preferably situated in the base, with the infra red transmitter and receiver 90, 92 and the light source 94 of the nest 20, 30 correspondingly situated in the recess. In that way, communication between the memory pack and the nest may be established without risk of interference from external sources.

An infra red data link and a solar type power supply are advantageous in that there need by

no exposed electrical contacts on the memory pack. By their nature, such memory packs are likely to be attractive to children, and so the lack of exposed electrical contacts will enhance the hard wearing nature of the memory pack. Furthermore, the memory pack may then be hermitically sealed, allowing the exposure of the memory pack to water or the like not to cause any damage to the electronic components inside.

The microcomputer and random access memory are used to perform a predetermined program set in the read only memory. The program embodies basic information concerning the nature of the character the subject of the memory pack in question. Such information as is stored in the ROM can be downloaded into a game capable of interacting with the memory pack. In that way, the information can be used to incorporate the character into the game.

Information which could suitably be held in ROM is such as:

an ID code telling the game character information;

a polygonal model for establishing a graphical representation of the character;

textures and shading for use in establishing the graphical representation;

predetermined speech and sound effects;

animation details to be superimposed on existing skeletal data if such data already exists in the computer game;

skeletal data concerning character movement if such is not already available in the computer game;

effects data such as whether a dust cloud is to be illustrated when the character runs;

character ability data, such as how high the character can jump, how fast it can run, special physical attributes; and

character performance statistics such as energy, fitness and experience.

As the character used in a game, one or more of the above characteristics, particularly those relating to experience, could vary, and those varied characteristics could be saved to the NVRAM. In that way, the character can be used many times, being transferred to different

games, on different consoles, the character gaining strength and experience along the way. Other information such as the user's name, birthday or customising modifications to the controls can also be saved to the NVRAM.

NVRAM is useful in that power may be conserved in the memory pack when not installed in a nest.

The memory pack may include a display, such as a liquid crystal display (LCD), for displaying saved data and other information.

A timer chip can be incorporated in the memory pack to track time whilst the cartridge is inactive.

The invention can be used to add variety to character based games. Moreover, it allows a user to become identified with a particular game playing character. In games such as sports simulations, players' favourite real life teams or players may be embodied in memory packs and thereby increasing the attractiveness of a game to the individual player.

The invention can be used both in conjunction with games systems intended to be used at home, and also with commercial games machines such as are found in amusement arcades.

In that way, the player may transfer a character used at home to be played with the same game or another game implemented on a games machine of an amusement arcade.

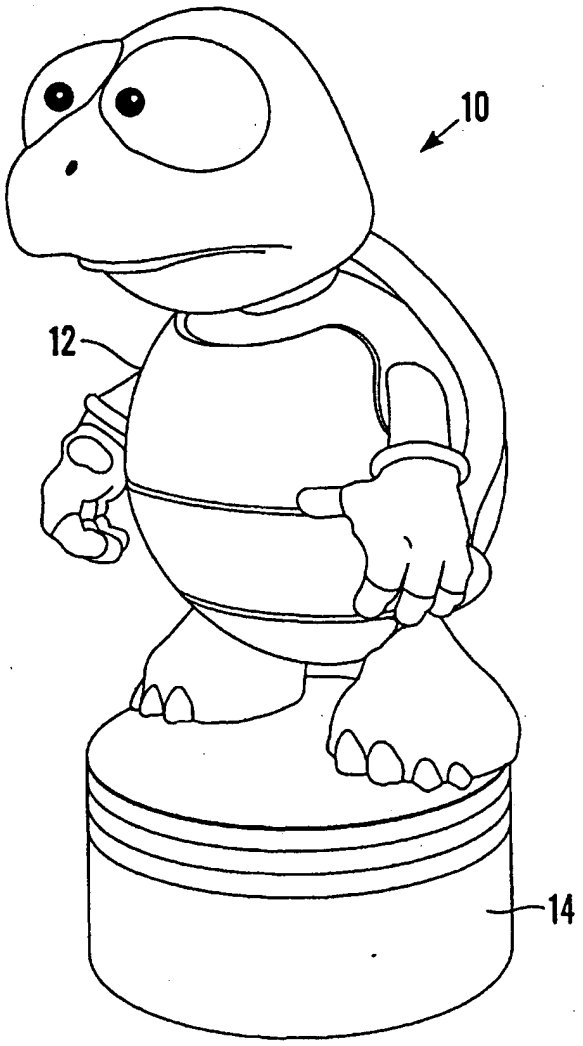


Fig. 1

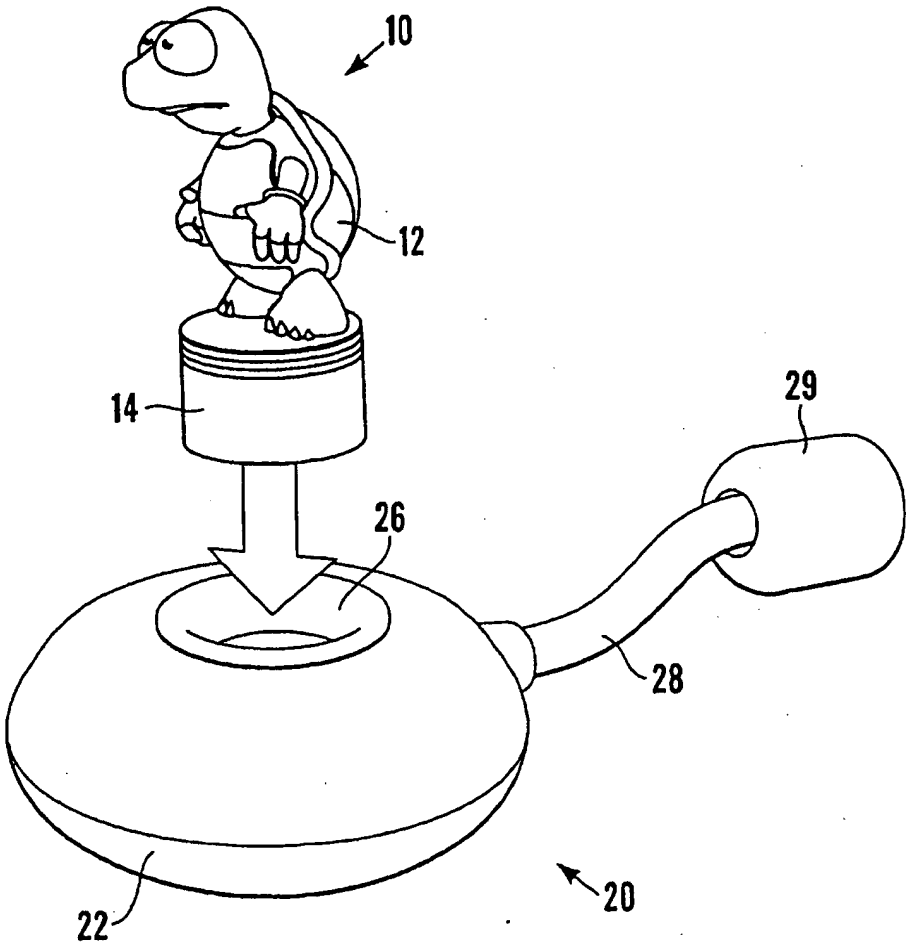


Fig.2

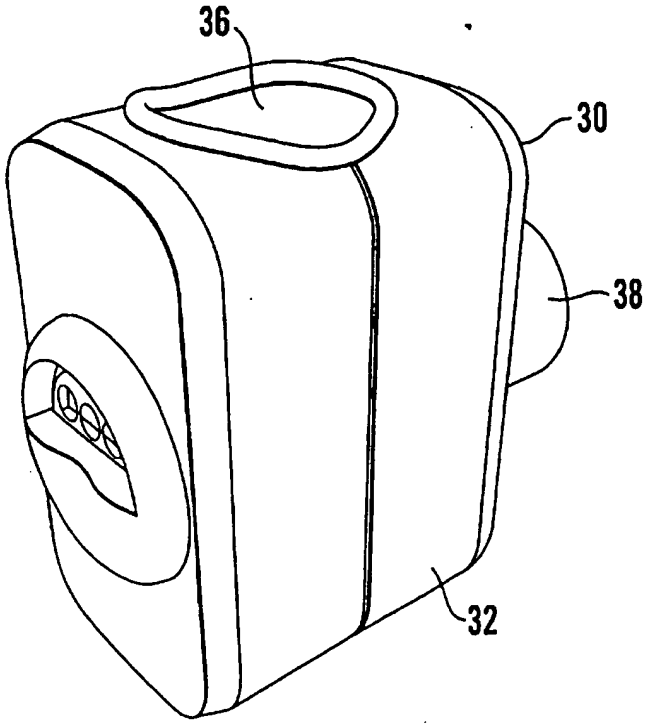


Fig.3a

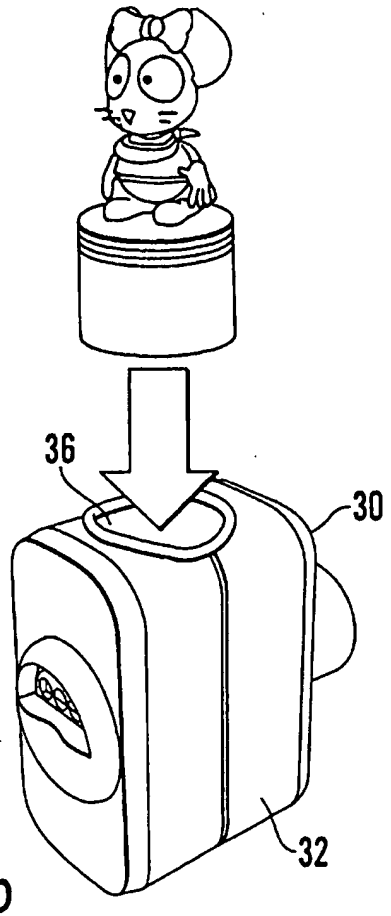


Fig.3b

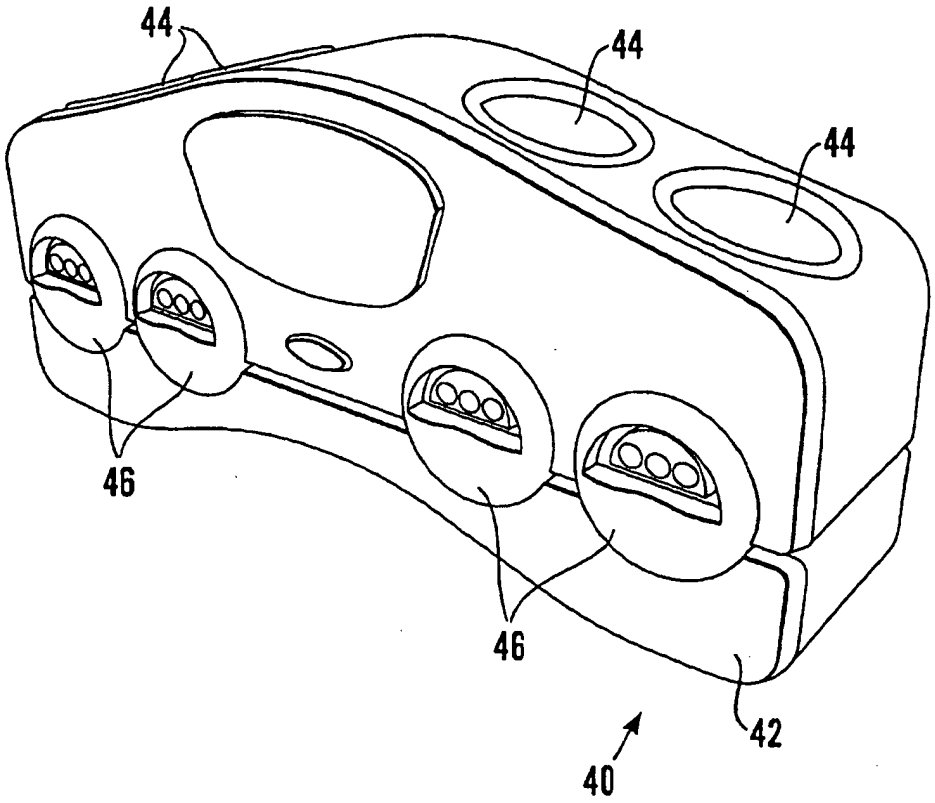


Fig.4

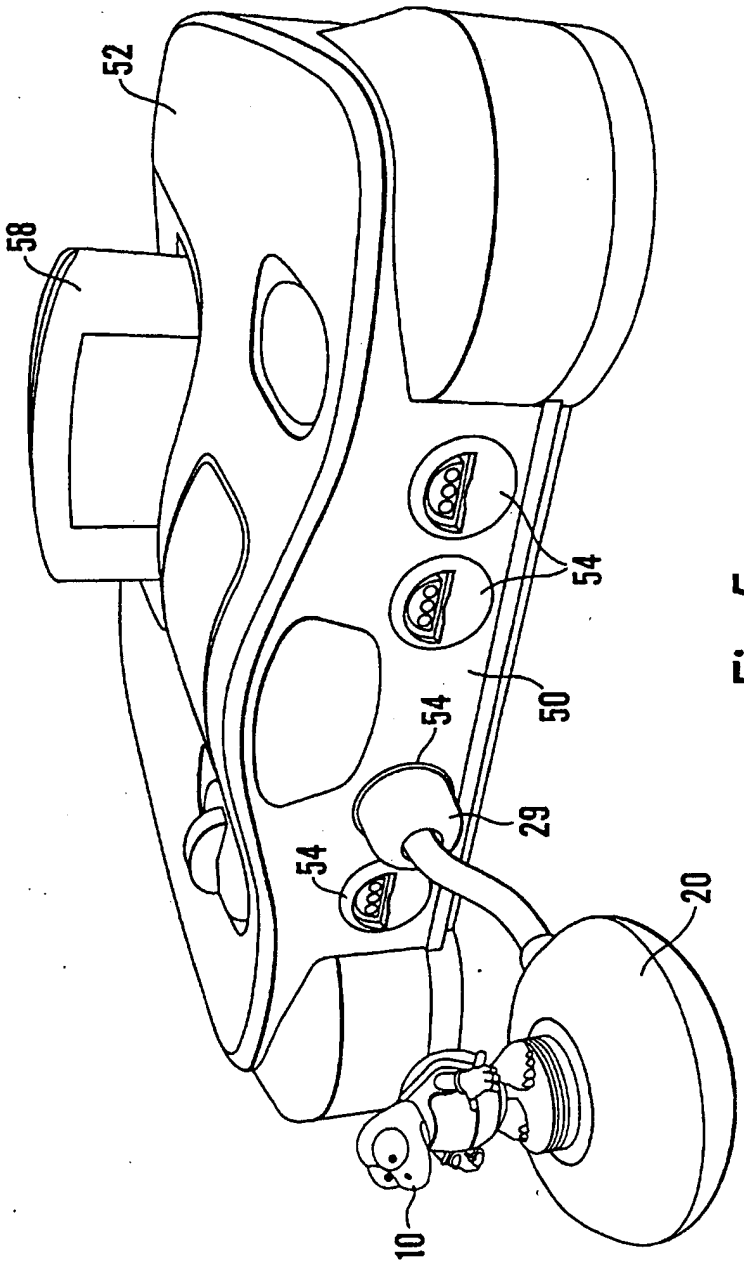


Fig.5

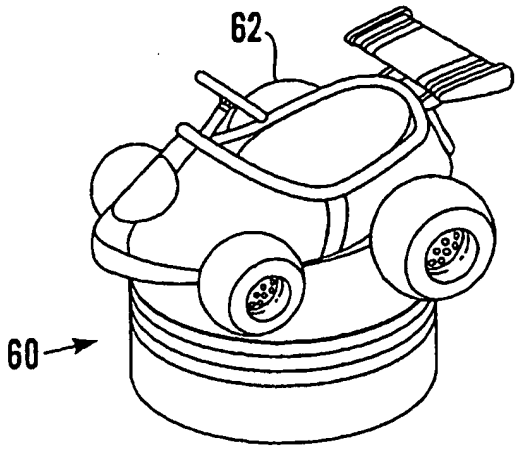


Fig.6a

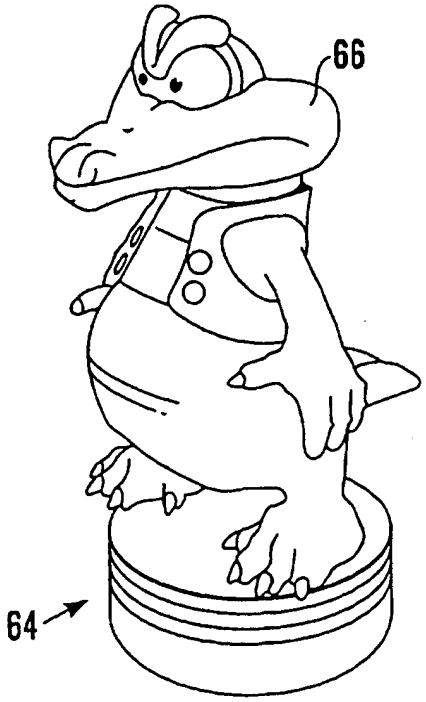


Fig.6b

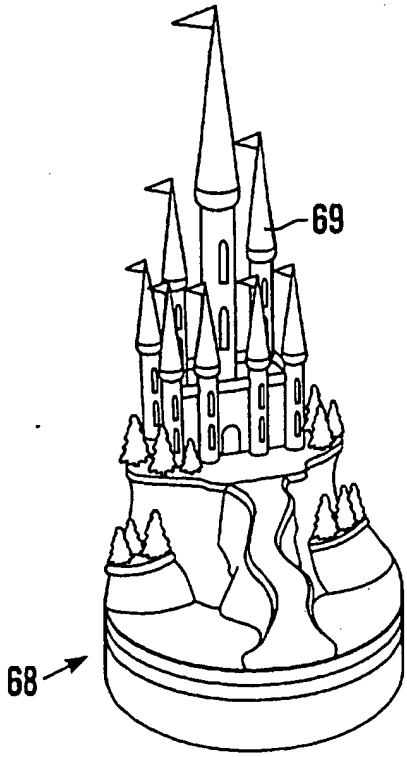


Fig.6c

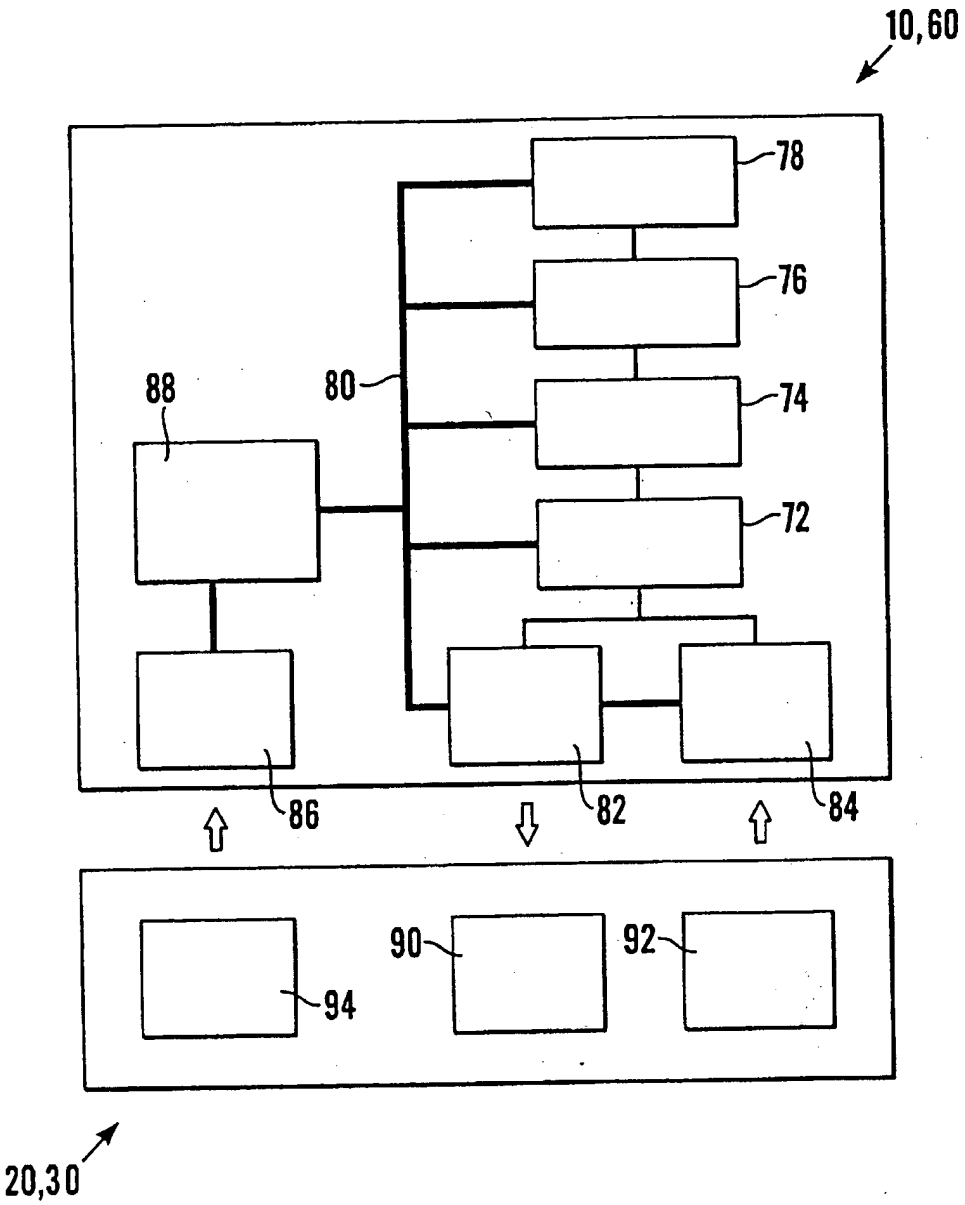


Fig.7